

**CLAIMS**

1. A process for the oxidation of thioethers to sulfoxides or sulfones or for the oxidation of sulfoxides to sulfones by treatment of thioethers or sulfoxides  
5 with an oxidizing amount of  $\epsilon$ -phthalimidoperhexanoic acid.
2. A process as claimed in claim 1, wherein a thioether is oxidized to sulfoxide and a sulfoxide is oxidized to sulfone, wherein  $\epsilon$ -phthalimidoperhexanoic acid is used in amount ranging from 0.8 to 1.5 equivalents per equivalent of substrate.
- 10 3. A process as claimed in claim 1 wherein a thioether is oxidized to a sulfone, wherein  $\epsilon$ -phthalimidoperhexanoic acid is used in amounts ranging from 1.5 to 3 equivalents per equivalent of substrate.
4. A process as claimed in any one of claims 1 to 3, wherein the oxidation is carried out at a temperature ranging from  $-20^{\circ}\text{C}$  to the reflux temperature of  
15 the solvent, for a reaction time ranging from 0.5 to 24 hours.
5. A process as claimed in any one of claims from 1 to 4, wherein the oxidation is carried out in a water-miscible or immiscible, protic or aprotic organic solvent.
6. A process as claimed in claim 5, wherein the solvent is selected from  
20 aliphatic or aromatic chlorides, aromatic hydrocarbons, esters of a carboxylic acid, alkyl carbonates, alkanols, alkyl or cycloalkyl ketones, or mixtures thereof.
7. A process as claimed in claims 1 for the preparation of a biologically active compound containing a sulfinyl or sulfonyl group.
8. A process as claimed in claim 7, wherein the biologically active  
25 compound is selected from the group consisting of modafinil, modafinil-sulfone, sulindac, sulindac-sulfone, dapsone, omeprazole, pantoprazole, lansoprazole, timoprazole, picoprazole, rabeprazole and exomeprazole.
9. A process as claimed in claim 1, wherein the intermediate compound

containing a thioether group is selected from the group consisting of:

- 1-(4-fluorophenyl)-2-(4-methylthio-phenyl)-ethanone;
  - (Z)-5-fluoro-2-methyl-1-[[4-(methylthio)-phenyl]methylene]-1H-indene-3-acetic acid;
  - 5     2-[(diphenylmethyl)thio]acetic acid;
  - 2-[(diphenylmethyl)thio]acetamide;
  - 4,4'-thiobisbenzenamine;
  - (5-methoxy-2[[4-methoxy-3,5-dimethyl-2-pyridinyl)methyl]thio]-1H-benzimidazole);
  - 10    (5-difluoromethoxy)-2-[(4-chloro-3-methoxy-2-pyridinyl)methyl]thio-1H-benzimidazole;
  - (5-difluoromethoxy-2[[3,4-dimethoxy-2-pyridinyl)methyl]thio]-1H-benzimidazole);
  - 15    (2-[[[methyl-4-(2,2,2-trifluoroethoxy)-2-pyridinyl)methyl]thio]-1H-benzimidazole);
  - (2-[[2-pyridinyl)methyl]thio]-1H-benzimidazole);
  - (5-ethoxycarbonyl-6-methyl-2[[3-methyl-2-pyridinyl)methyl]thio]-1H-benzimidazole);
  - (2-[[[3-methyl-4-(3-methoxypropoxy)-2-pyridinyl)methyl]thio]-1H-benzimidazole); and
  - 20    (S) (5-methoxy-2[[4-methoxy-3,5-dimethyl-2-pyridinyl)methyl]thio]-1H-benzimidazole).
10. A process as claimed in claim 1, wherein the intermediate compound containing a sulfoxide group is selected from the group consisting of sulindac,
- 25    modafinil, 1-(4-fluorophenyl)-2-(4-methylsulfinyl-phenyl)-ethanone and 2-[(diphenylmethyl)sulfinyl]acetic acid.